

AI drug discovery company Syntekabio identified respiratory disease drug as a potential COVID19 therapeutics

June 2, 2020 by Sunil Youn

- Respiratory disease drug identified as potential COVID-19 therapeutics
- AI-driven drug repositioning allowed a rapid search for COVID-19 drug candidates
- Exploring partners for clinical development

Daejeon, Republic of Korea, June 1, 2020 – Syntekabio (KOSDAQ: 226330), An AI and NGS based drug development company, announced that they used their proprietary AI platform DeepMatcher™ to screen 3,000 approved drugs and identified potential COVID-19 therapeutics. The company applied for a patent for its usage.

Crystal structure of SARS-CoV-2's 3CL protease (Mpro), the main viral protease which plays key roles in viral gene expression and proliferation of the SARS-CoV-2 virus, was first published in the Protein Data Bank (PDB)[1] on February 5th. As soon as this structural information became available, Syntekabio commenced AI screening using DeepMatcher™ and supercomputer. The screening initially found 30 repositioning candidates, with many showing effective inhibition of COVID-19-induced cellular pathology when tested on SARS-CoV-2 infected monkey kidney cells. This in vitro assay was a collaborative work with one of the South Korean national research institutes, where the BSL-3 facility was established. Syntekabio decided to focus on one of the candidates as it showed an anti-COVID-19 effect that was as robust as remdesivir.

Besides its potency, the final candidate is anticipated to have multiple other benefits. The final candidate was originally approved to treat respiratory diseases. Besides the potency, it is anticipated to have multiple additional benefits over remdesivir: ▲ it is expected to have a preventive effect against COVID-19 for those respiratory disease patients who are already on this drug, ▲ it is likely to be safer as it has long-term safety data, and ▲ administration is more convenient given that it is an oral drug.

Sunil Youn, MD, Director of Business Development of Syntekabio, said, "Our AI solution and supercomputer allowed us to identify experimentally validated potential COVID-19 drug in only six weeks – a speed that you cannot achieve in conventional ways. We hope that by identifying respiratory diseases drug as a candidate COVID-19 drug we can offer differentiated solutions for those high-risk patients."

Reference

- [1] Z. Jin *et al.*, "Structure of Mpro from COVID-19 virus and discovery of its inhibitors," *bioRxiv*, 2020, doi: 10.1101/2020.02.26.964882.

About Syntekabio, Inc.

Syntekabio is an AI and NGS based drug development company, utilizing genomic database and artificial intelligence to predict and identify new molecular entities to be a relevant new drug product. It is the global first AI drug development company listed on the public market (KOSDAQ: 226330) last December. The Company's lead product candidate, STB-C017, an IDO/TDO dual inhibitor for the treatment of advanced solid tumor, is under nonclinical development. The company's subsequent pipelines include personalized neoantigen cancer vaccines, small molecules targeting established oncology targets, and biomarkers to stratify relevant patients to maximize treatment efficacy. Syntekabio's business model is to collaborate with various academic institutions and biopharma companies to optimize development process, utilizing proprietary AI and NGS data. The Company is headquartered in Daejeon, Rep. of Korea, with offices in Seoul, Rep. of Korea and Rockville, MD, USA. For additional information, please visit webpage: <http://www.syntekabio.com/>

About DeepMatcher™

Based on Syntekabio's proprietary artificial intelligence technology focused on 3D protein and chemical structure prediction, utilizing genomic big data, DeepMatcher™ offers several solutions for biopharma industry and academic institutions.

Small molecule lead discovery: AI based chemical lead discovery, secondary and/or off-target effect analysis, resistant biomarker identification.

Neoantigen prediction: Personalized or common neoantigen-based cancer immunotherapy powered by deep learning driven MHC-peptide binding prediction (proven accuracy of 94% Positive Predictive Value). Prospective co-development may derive de novo personalized neoantigen therapeutics.

